

REMARKS

Claims 1, 3, 5, 7, and 10 have been amended. No new matter is introduced by the amendments of these claims. Claims 1-11 remain pending.

The Examiner rejected claims 1, 2, and 7 under 35 U.S.C. §103(a) as being unpatentable over Fijolek et al. (US patent 6,510,162) in view of Gilbrech (US patent 6,173,399). Additionally, claims 3-6 and 8-9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Fijolek et. al in view of Rosen et al. (“BGP/MPLS VPN’s” 1999). The Examiner’s rejections are respectfully traversed as follows.

Claim 1 is directed towards an “apparatus for routing packets from a first network node to a second network node in a data network.” Claim 1 also recites “means for assigning and then sending an ID to the first node” and “means for mapping the assigned ID with at least one VPN, wherein the ID is assigned, sent, and mapped by an entity other than the first node.” Claim 1 also requires “means for receiving a packet from the first node, said packet including the ID associated with said first node, and including routing information for routing said packet to a destination address associated with said second node” and “means for examining the packet to identify the ID of the first node.” Claim 1 further requires “means for using said first node ID and routing information and the mapping to determine whether said first node is associated with at least one VPN.” Claim 3 recites “means for assigning and then sending an ID to the first node” and “means for mapping the assigned ID with at least one VPN, wherein the ID is assigned, sent, and mapped by an entity other than the first node.” Claim 5 recites “means for if it is determined that said first node is a member of at least one VPN, assigning and then sending an ID to the node and binding the ID of said node with said VPN to thereby cause said first node to be associated with said VPN, wherein the ID is assigned, sent, and then bound with the node by an entity other than the node.” Claim 10 recites “means for assigning and then sending to the first node an ID, wherein the ID is assigned and sent to the first node by an entity other than the first node” and “means for associating the assigned ID with the first VPN to thereby cause the first node to be associated with the first VPN, wherein the assigned ID is associated by the entity other than the first node.”

Embodiments of the present invention include mechanisms for assigning an ID to a node and then sending such ID to the node, wherein the ID is assigned and sent by an entity other than the node. This assigned and sent ID is also mapped or associated with one or more VPN’s by such other entity or device. Thus, when a packet having the assigned ID is received by such other device from the node that received such ID, this other device may determine whether the node belongs to a particular VPN based on the returned ID and mapping or associating of such ID. Accordingly, the node does not have to utilize a VPN label or implement any kind of VPN

protocol in order to take advantage of a VPN arrangement since an intermediary device can determine the VPN of the node based on the assigned ID and mapping of such ID to a particular VPN.

Although the primary reference Fijolek appears to teach that a CMTS device assigns a service identifier (SID) to a cable modem (Col. 15, Lines 17-18), Fijolek fails to teach that such CMTS also maps or associates such SID with a VPN, in the manner claimed. Specifically, Fijolek fails to teach or suggest that “the ID is assigned, sent, and mapped by an entity other than the first node” as recited in claims 1 and 3. Nor does Fijolek teach or suggest that “the ID is assigned, sent, and then bound [with a VPN] by an entity other than the node” as recited in claim 5. Fijolek also fails to teach or suggest that the assigning and sending of an ID to a node and the associating such ID with a VPN is performed by another device, in the manner claimed in claim 10.

The secondary references Gilbrech and Rosen also fail teach or suggest such limitations. Gilbrech does teach a VPN Unit that utilizes a table to determine whether the source and destination address are members of a same VPN group. See Col. 7, Lines 13-16. However, Gilbrech fails to teach or suggest how such table was formed. This table may be preconfigured in the VPN Unit. Gilbrech appears to be completely silent as to how these tables are formed. Nevertheless, Gilbrech fails to teach or suggest that a device other than the end node is configured to map an ID, that was assigned and sent by such other device to the end node, to at least one VPN. In other words, Gilbrech fails to teach mapping or binding an ID, *that was assigned and sent by a first device to a second node*, to a specific VPN, in the manner claimed. Gilbrech also necessarily fails to teach or suggest the use of such mapping by such first device, in the manner claimed.

The secondary reference Rosen teaches VPN techniques for routing packets between end nodes in a shared VPN. In the cited portion on page 16, section 8.1, Rosen teaches using separate forwarding tables for each virtual site, and these tables apparently contain addresses for routing in a particular VPN: “If the CE receives the full set of routes from the PE, the PE will not need to do an address lookup at all on packets received from the CE.” The labels of each packet would appear to indicate which routing table to use for the particular packet. Although Rosen teaches using labels from a packet that may be characterized as using an ID, Rosen fails to teach or suggest mapping or binding an ID, *that was assigned and sent by a first device to a second node*, to a specific VPN, in the manner claimed.

The Examiner’s rejections of the dependent claims are also respectfully traversed. However, to expedite prosecution, all of these claims will not be argued separately. Claims 2, 4,

6-9, and 11 each depend directly or indirectly from independent claims 1, 3, 5, or 10 and, therefore, are respectfully submitted to be patentable over cited art for at least the reasons set forth above with respect to claims 1, 3, 5, or 10. Further, the dependent claims require additional elements that when considered in context of the claimed inventions further patentably distinguish the invention from the cited art.

Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. If the Examiner believes that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number listed at the bottom of this page.

Respectfully submitted,
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